FIG. 1

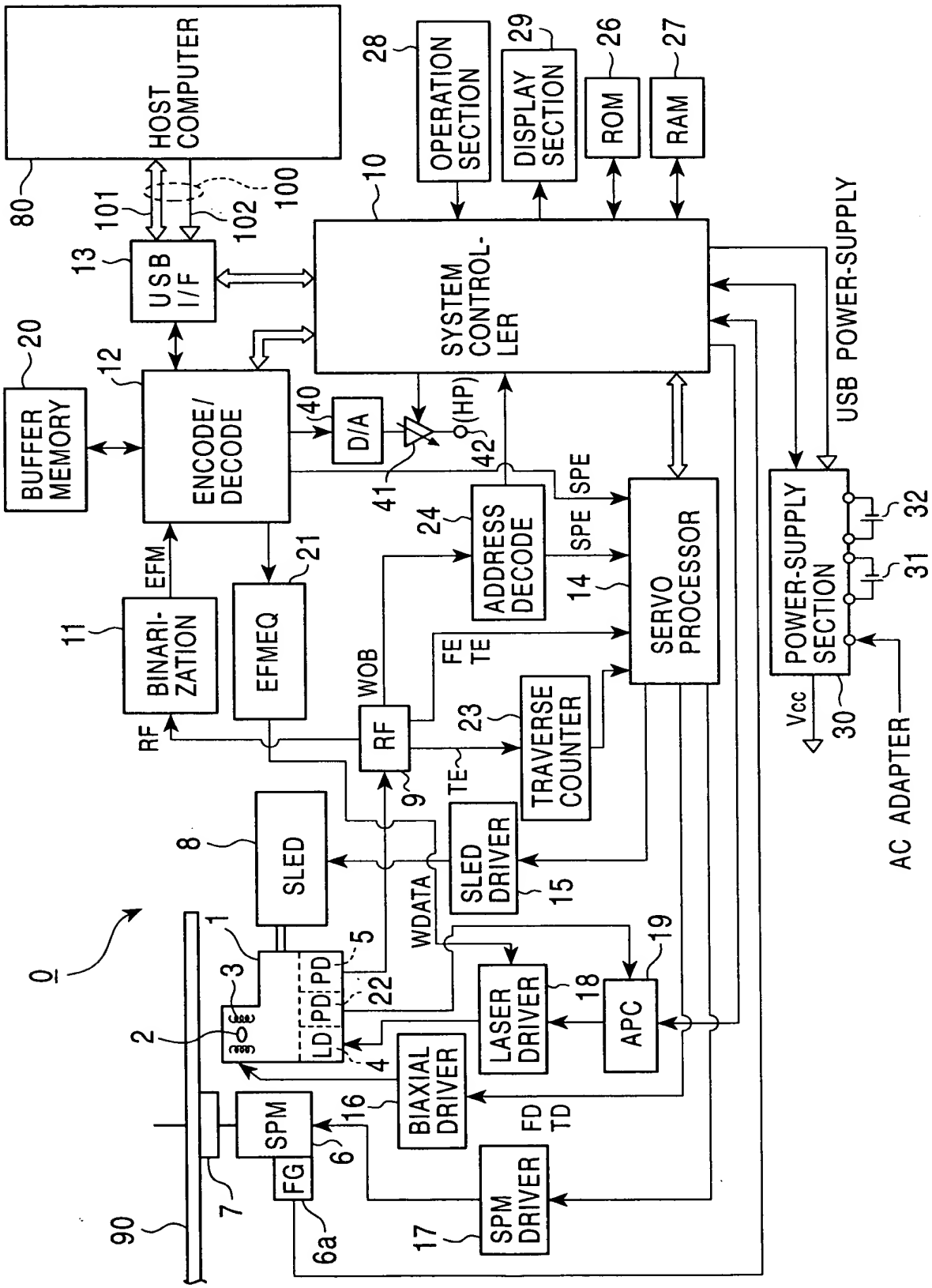
HOST COMPUTER
80
101
102
100
13
USB I/F
10
SYSTEM CONTROL-LER
28
OPERATION SECTION
29
DISPLAY SECTION
26
ROM
27
RAM
20
BUFFER MEMORY
12
ENCODE/ DECODE
40
D/A
41
42
(HP)
SPE
24
ADDRESS DECODE
14
SERVO PROCESSOR
USB POWER-SUPPLY
POWER-SUPPLY SECTION
32
31
30
Vcc
AC ADAPTER
EFM
11
BINARI-ZATION
21
EFMEQ
RF
WOB
FE
TE
23
TRAVERSE COUNTER
9
TE
8
SLED
SLED DRIVER
15
WDATA
19
0
1
3
2
LD
PD
PD
5
22
4
LASER DRIVER
18
APC
BIAXIAL DRIVER
16
FD
TD
SPM
FG
6
7
6a
90
SPM DRIVER
17

FIG. 2

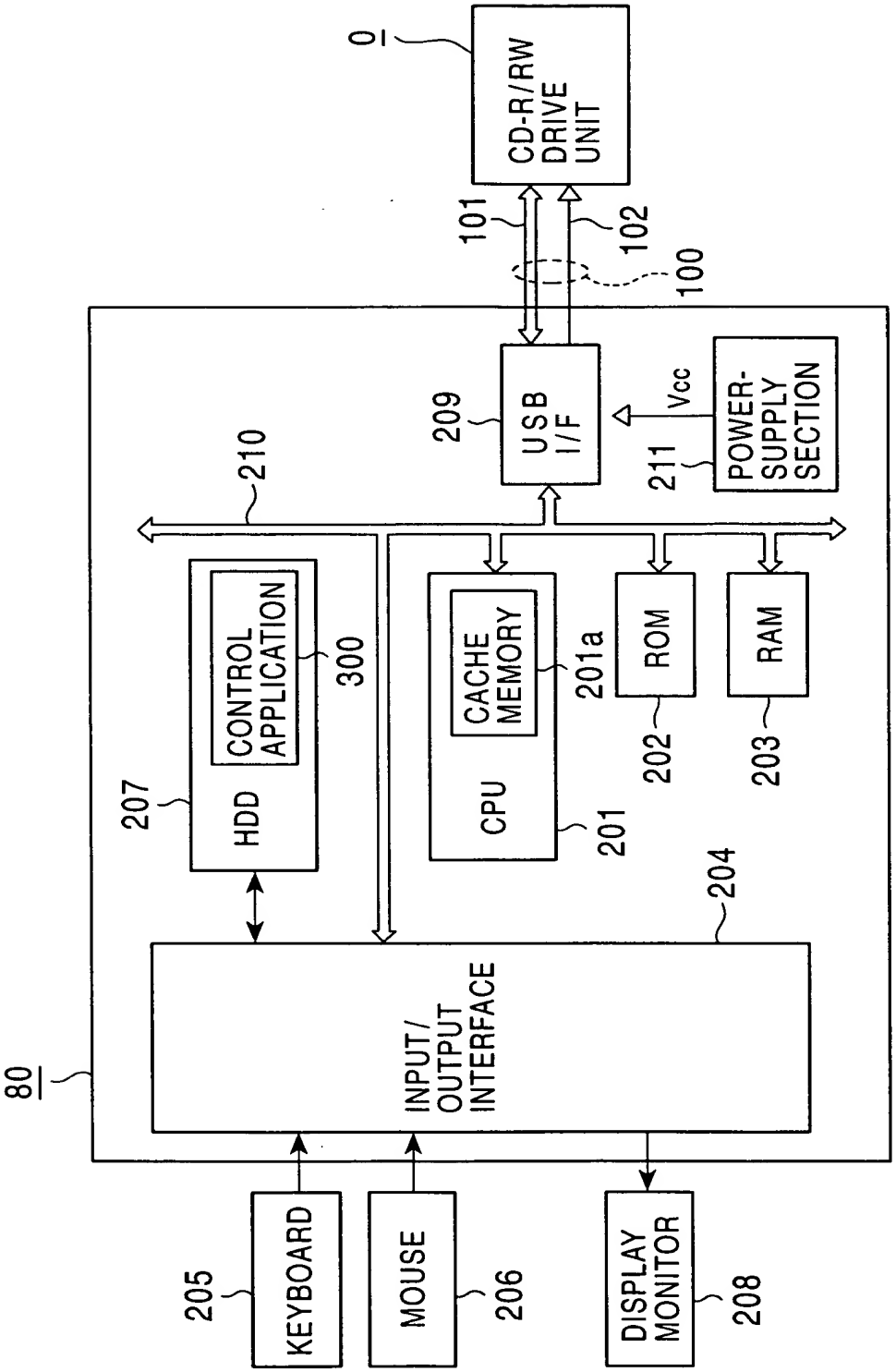
0
CD-R/RW DRIVE UNIT
101
102
100
209
USB I/F
Vcc
211
POWER-SUPPLY SECTION
210
207
HDD
CONTROL APPLICATION
300
CPU
CACHE MEMORY
201a
201
ROM
202
RAM
203
204
INPUT/ OUTPUT INTERFACE
80
205
KEYBOARD
MOUSE
206
DISPLAY MONITOR
208

FIG. 3

DISK-AT-ONCE (DAO)

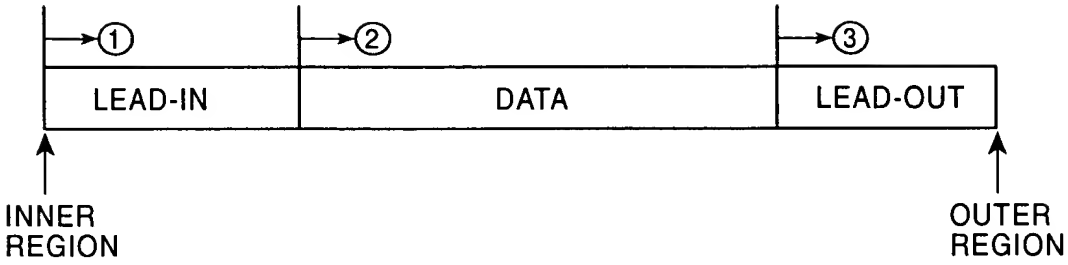

FIG. 4

TRACK-AT-ONCE (TAO)

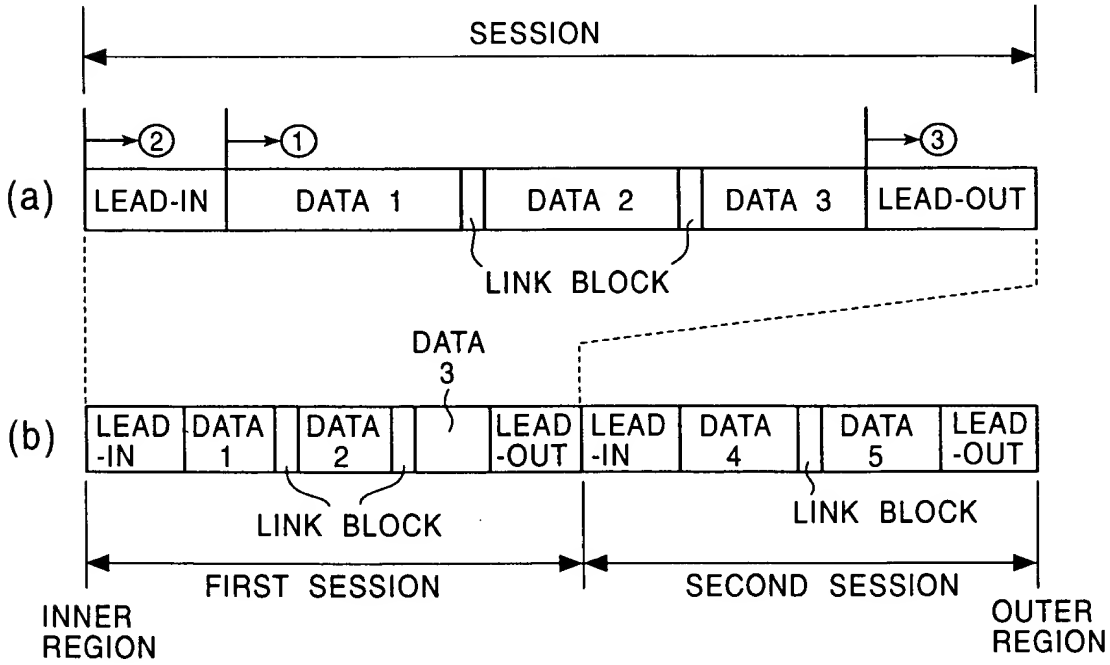

FIG. 5

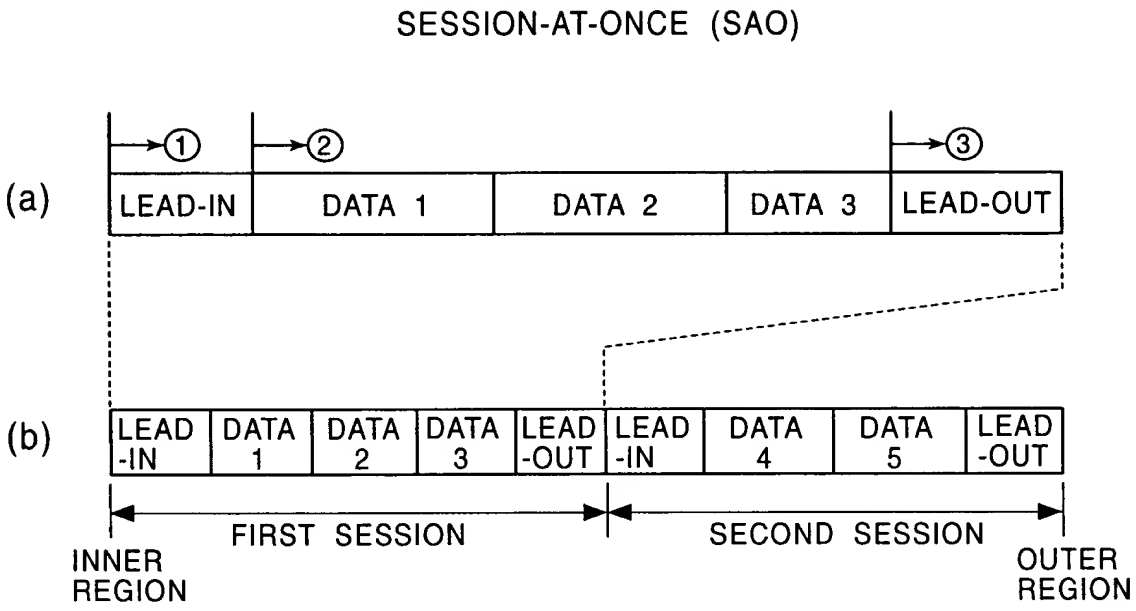
SESSION-AT-ONCE (SAO)
(a)
①
②
③
LEAD-IN
DATA 1
DATA 2
DATA 3
LEAD-OUT
(b)
LEAD -IN
DATA 1
DATA 2
DATA 3
LEAD -OUT
LEAD -IN
DATA 4
DATA 5
LEAD -OUT
FIRST SESSION
SECOND SESSION
INNER REGION
OUTER REGION

FIG. 6

byte	bit 7	6	5	4	3	2	1	0
0	Operation Code (D5h)							
1	Reserved							
2	Reserved		Page Code (000001b)					
3	Reserved							
4	Reserved							
5	Reserved							
6	Reserved							
7	(MSB) Allocation Length							
8	(LSB)							
9	Reserved							
10	Reserved							
11	Reserved							

FIG. 7

byte	bit 7	6	5	4	3	2	1	0
0	Reserved		Page Code (000001b)					
1	Page Length (28h)							
2	The kind of power supply which is connected physically at present and which can be used.							
	(Reserved)				USB/1394 /PCMCIA BUS	Dry cell	Rechar-geable battery	AC adapter
3	The kind of power supply which is actually being used at present.							
	(Reserved)				USB/1394 /PCMCIA BUS	Dry cell	Rechar-geable battery	AC adapter
4	The power supply which can be used when this drive reads data as a computer peripheral.							
	(Reserved)				USB/1394 /PCMCIA BUS	Dry cell	Rechar-geable battery	AC adapter
5	The power supply which can be used when this drive writes data as a computer peripheral.							
	(Reserved)				USB/1394 /PCMCIA BUS	Dry cell	Rechar-geable battery	AC adapter

①

FIG. 8

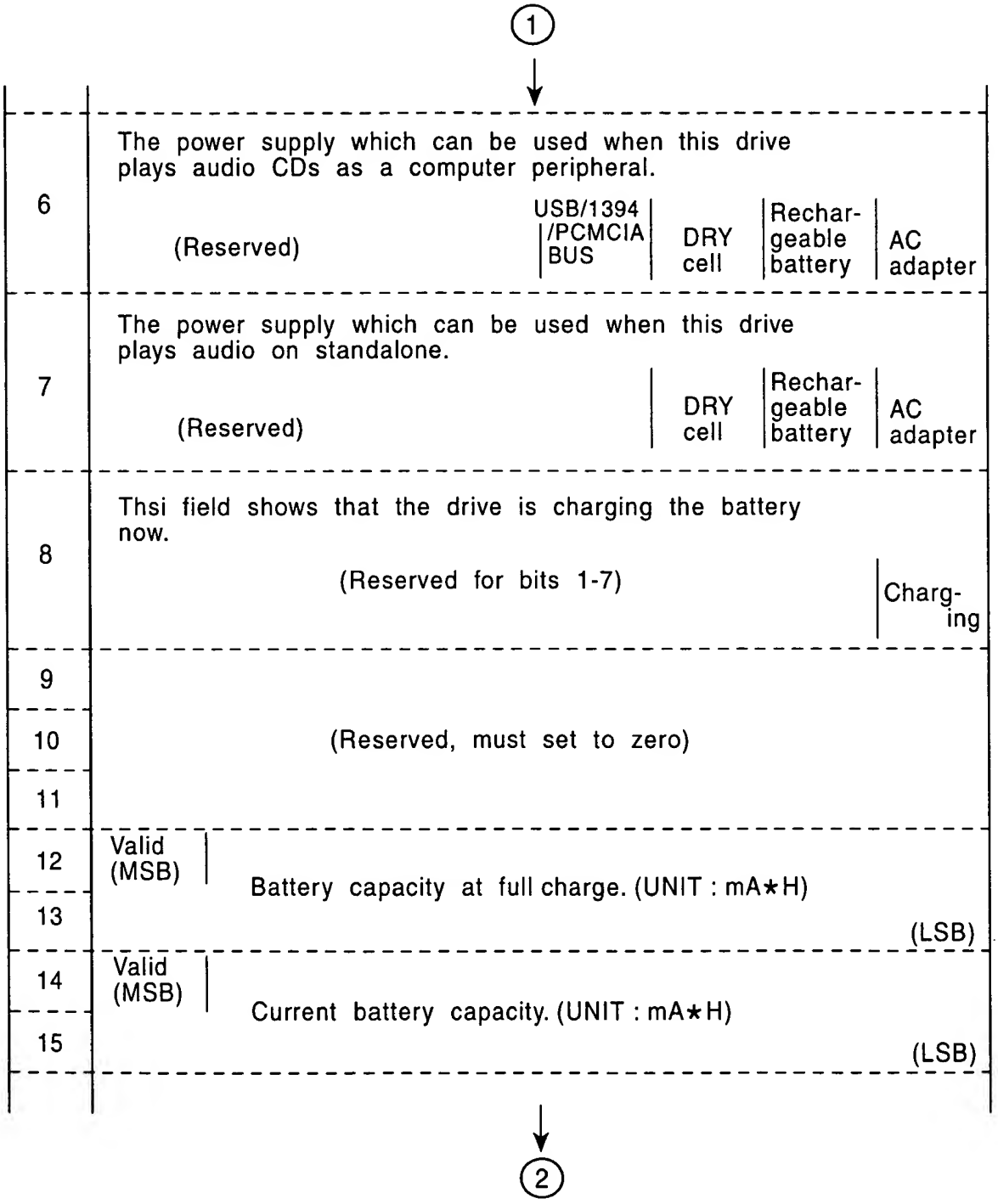
1
6
The power supply which can be used when this drive plays audio CDs as a computer peripheral.
(Reserved)
USB/1394 /PCMCIA BUS
DRY cell
Rechar-geable battery
AC adapter
7
The power supply which can be used when this drive plays audio on standalone.
(Reserved)
DRY cell
Rechar-geable battery
AC adapter
8
Thsi field shows that the drive is charging the battery now.
(Reserved for bits 1-7)
Charg-ing
9
10
11
(Reserved, must set to zero)
12
Valid (MSB)
Battery capacity at full charge. (UNIT : mA*H)
13
(LSB)
14
Valid (MSB)
Current battery capacity. (UNIT : mA*H)
15
(LSB)
2

FIG. 9

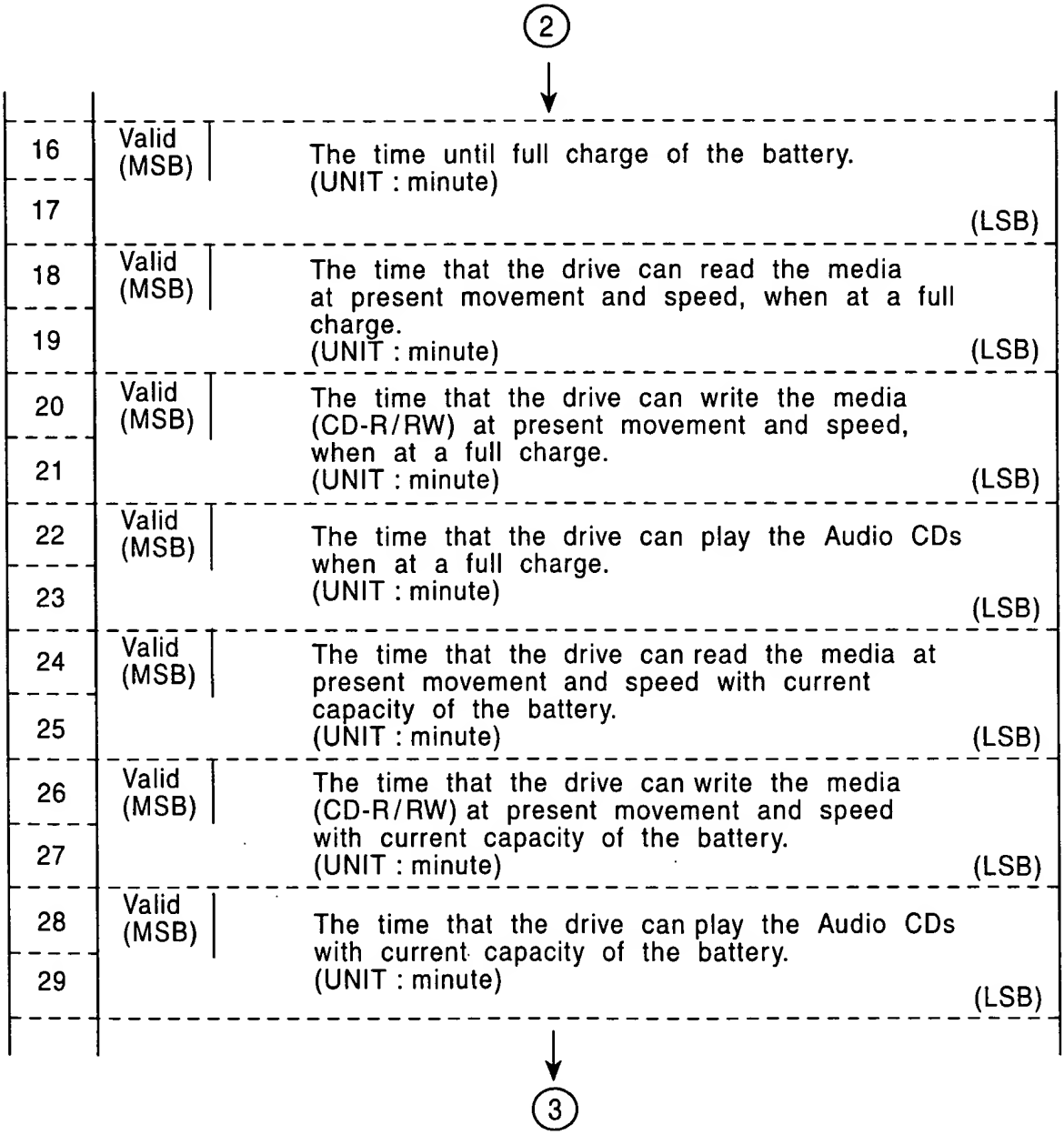

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FIG. 10

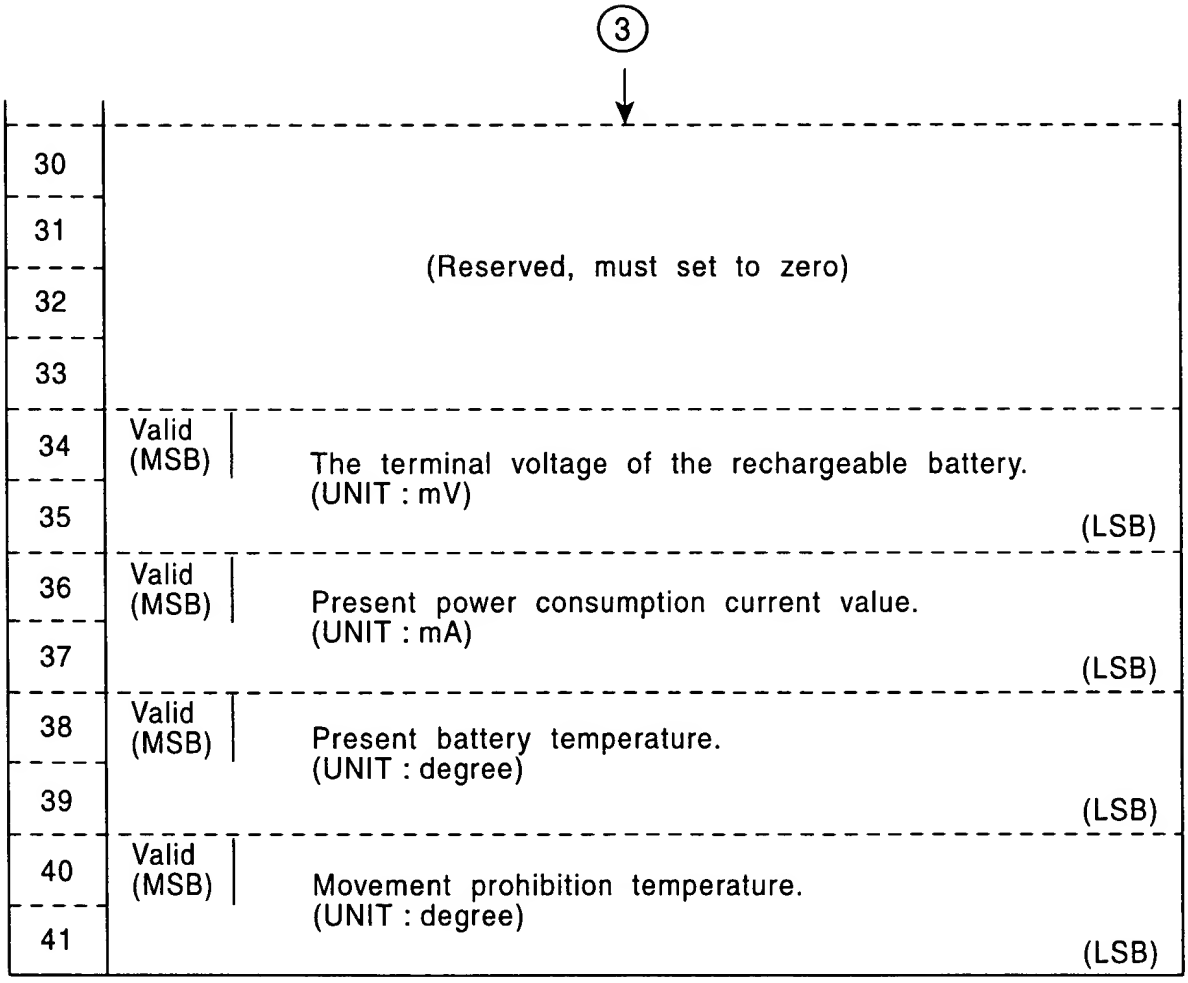
③
30
31
32
33
(Reserved, must set to zero)
34
35
Valid (MSB)
The terminal voltage of the rechargeable battery. (UNIT : mV)
(LSB)
36
37
Valid (MSB)
Present power consumption current value. (UNIT : mA)
(LSB)
38
39
Valid (MSB)
Present battery temperature. (UNIT : degree)
(LSB)
40
41
Valid (MSB)
Movement prohibition temperature. (UNIT : degree)
(LSB)

FIG. 11

POWER-SUPPLY STATE		CONTROL
AC ADAPTER CONNECTION		READ/WRITE PERMITTED, POWER SAVING MODE NOT-SET (RELEASED)
BATTERY	FIRST STAGE	READ/WRITE PERMITTED, FIRST LEVEL POWER SAVING MODE SET
		BOUNDARY VALVE 1
	SECOND STAGE	READ/WRITE PERMITTED, SECOND LEVEL POWER SAVING MODE SET
		BOUNDARY VALVE 2
	THIRD STAGE	READ-ONLY PERMITTED (WRITE PROHIBITED), SECOND LEVEL POWER SAVING MODE SET; WARNING DISPLAY
		BOUNDARY VALVE 3
	FOURTH STAGE	FORCED CLOSING PROCESS

FIG. 12

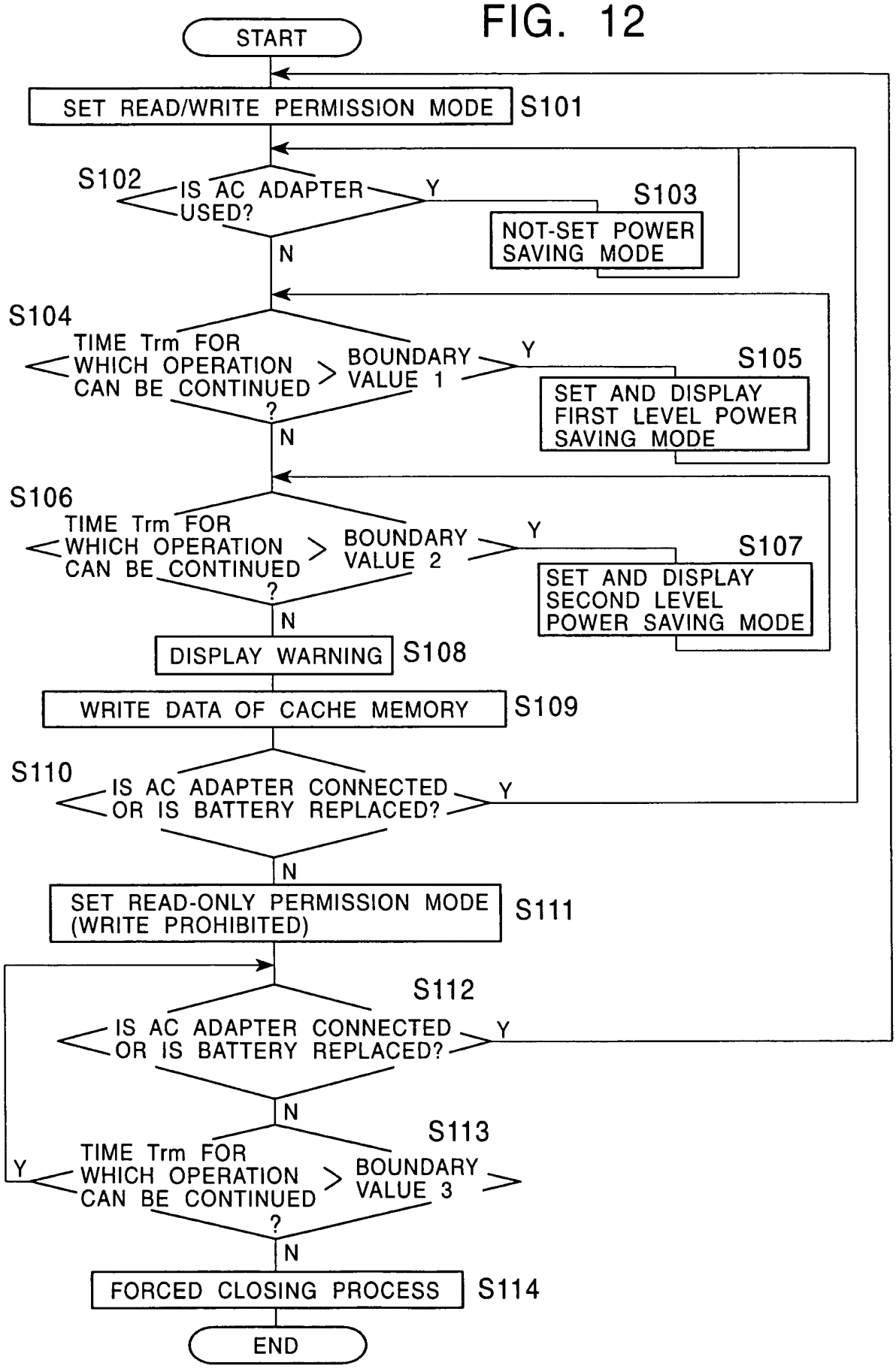

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FIG. 13

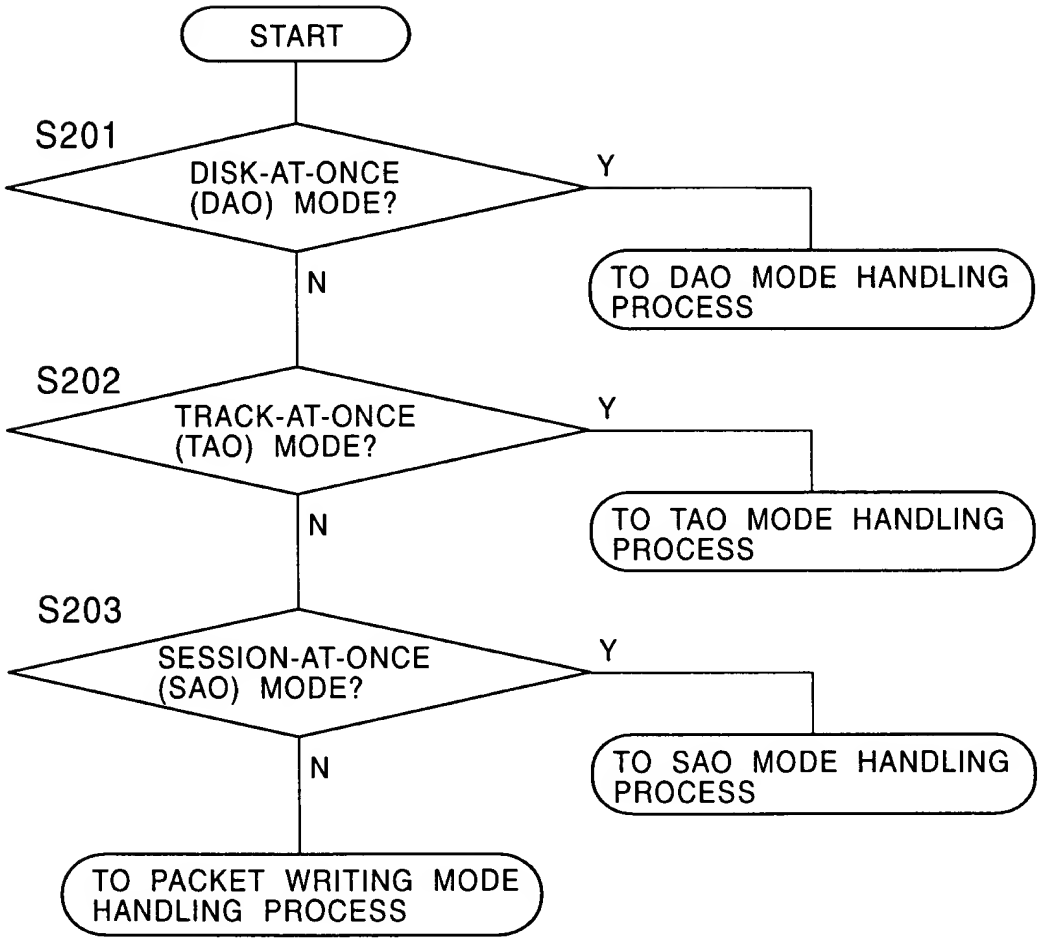
START
S201
DISK-AT-ONCE (DAO) MODE?
Y
TO DAO MODE HANDLING PROCESS
N
S202
TRACK-AT-ONCE (TAO) MODE?
Y
TO TAO MODE HANDLING PROCESS
N
S203
SESSION-AT-ONCE (SAO) MODE?
Y
TO SAO MODE HANDLING PROCESS
N
TO PACKET WRITING MODE HANDLING PROCESS

FIG. 14

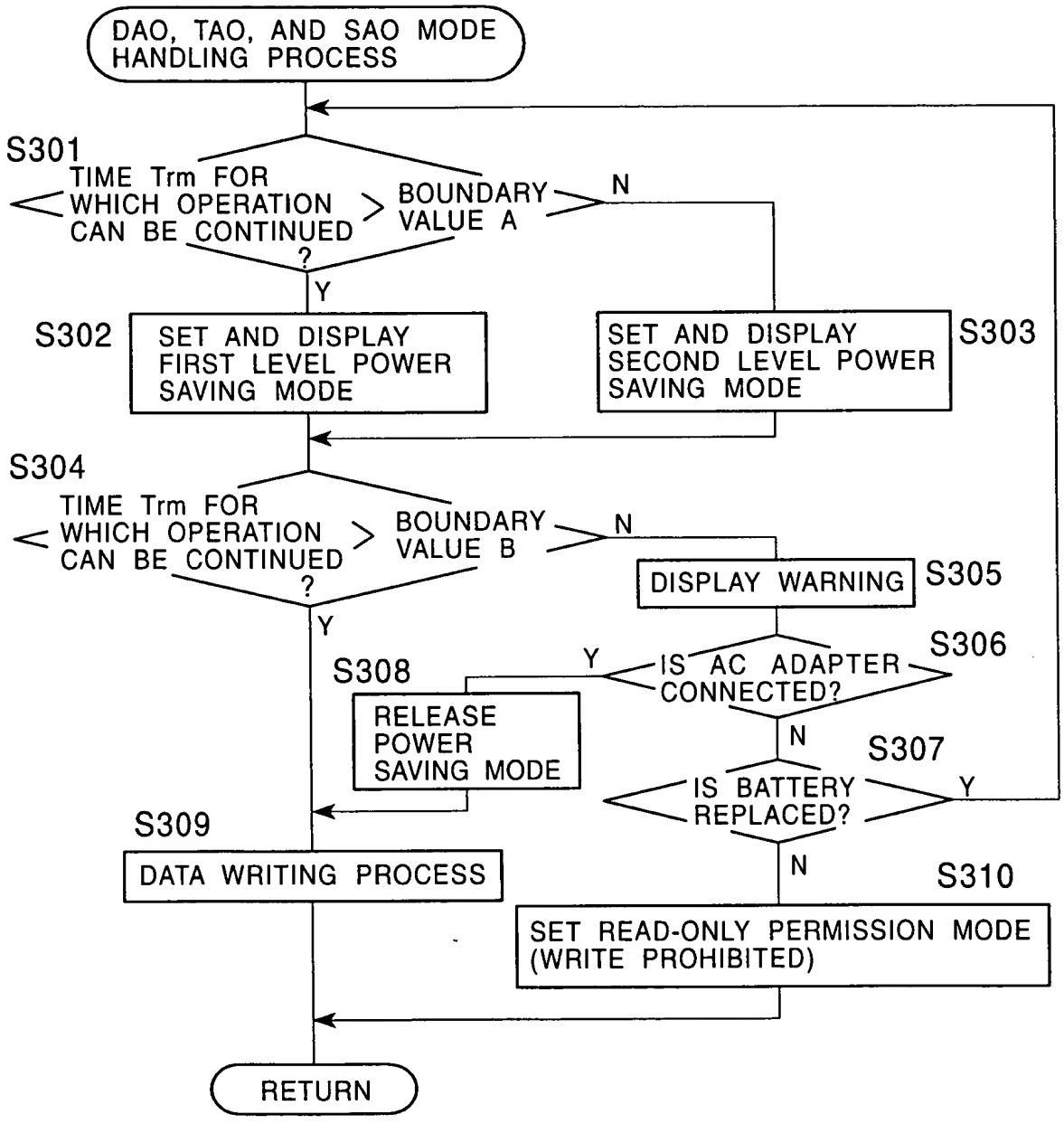

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FIG. 15

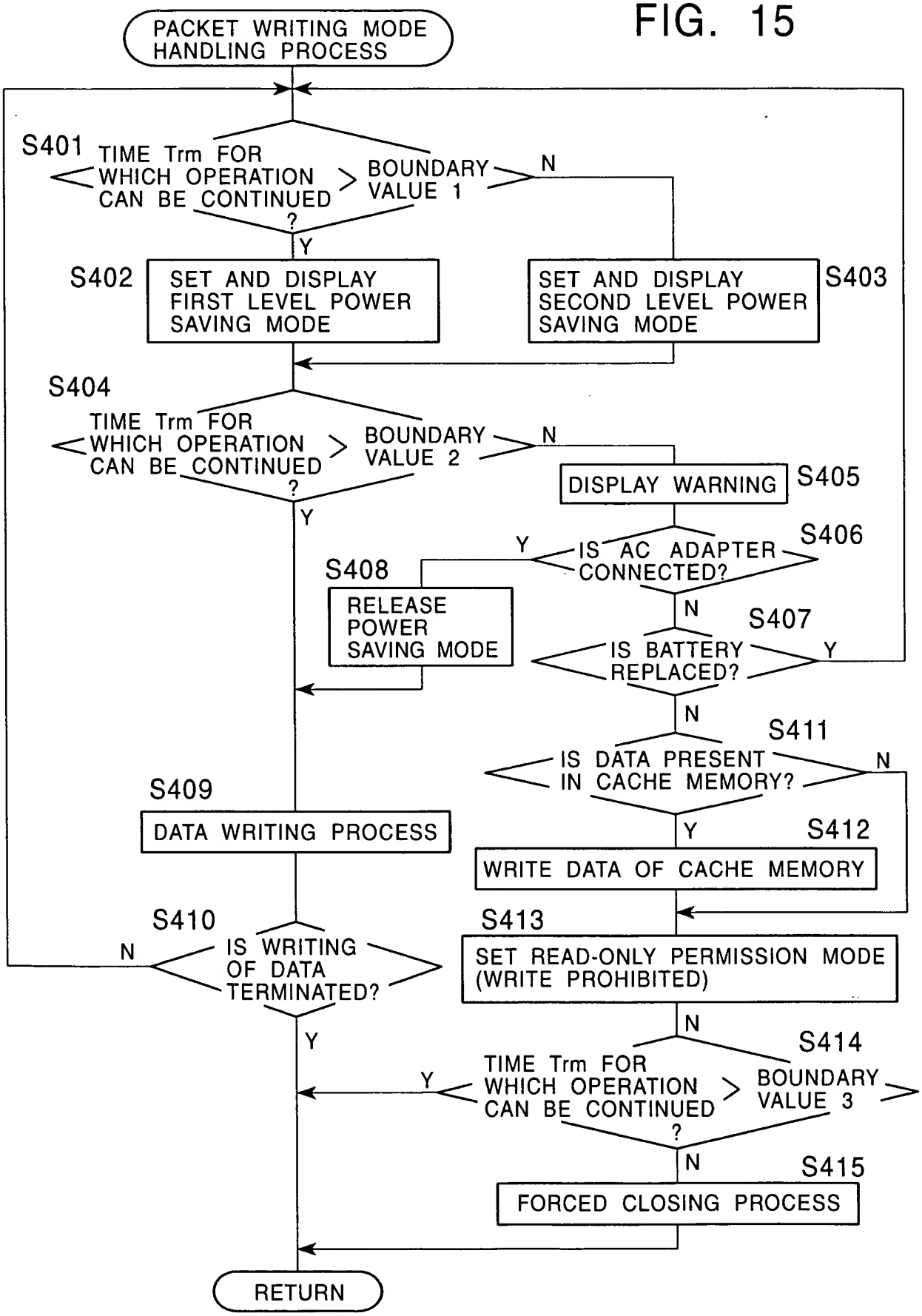
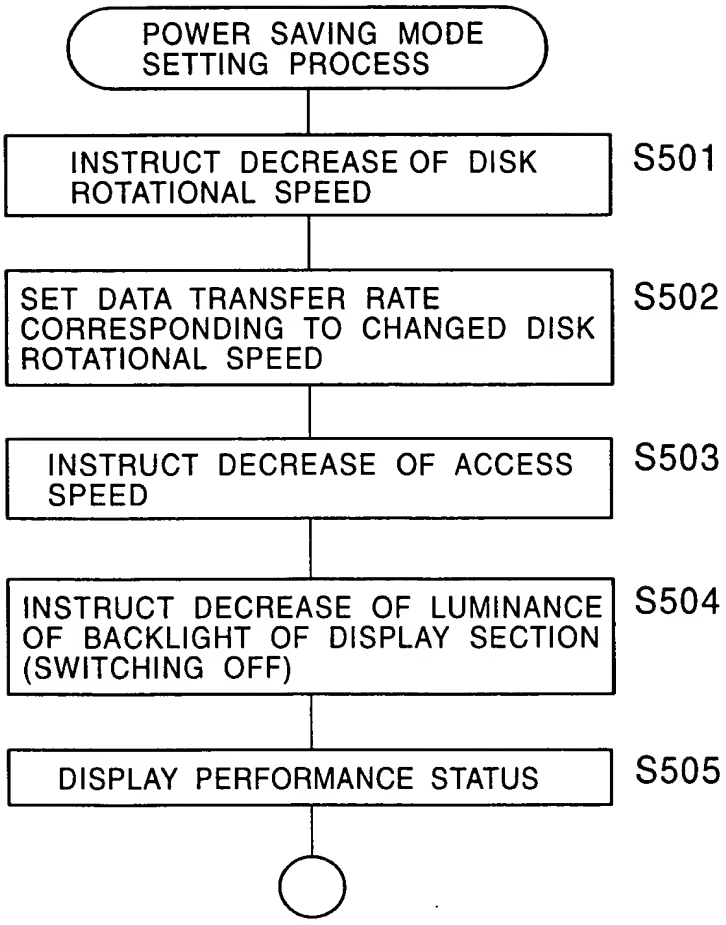

PACKET WRITING MODE HANDLING PROCESS
S401
TIME Trm FOR WHICH OPERATION CAN BE CONTINUED
BOUNDARY VALUE 1
N
Y
S402
SET AND DISPLAY FIRST LEVEL POWER SAVING MODE
SET AND DISPLAY SECOND LEVEL POWER SAVING MODE
S403
S404
TIME Trm FOR WHICH OPERATION CAN BE CONTINUED
BOUNDARY VALUE 2
N
Y
DISPLAY WARNING
S405
S406
IS AC ADAPTER CONNECTED?
Y
N
S408
RELEASE POWER SAVING MODE
S407
IS BATTERY REPLACED?
Y
N
S411
IS DATA PRESENT IN CACHE MEMORY?
N
Y
S409
DATA WRITING PROCESS
S412
WRITE DATA OF CACHE MEMORY
S410
IS WRITING OF DATA TERMINATED?
N
Y
S413
SET READ-ONLY PERMISSION MODE (WRITE PROHIBITED)
N
S414
TIME Trm FOR WHICH OPERATION CAN BE CONTINUED
BOUNDARY VALUE 3
Y
N
S415
FORCED CLOSING PROCESS
RETURN

FIG. 16


POWER SAVING MODE SETTING PROCESS
INSTRUCT DECREASE OF DISK ROTATIONAL SPEED
S501
SET DATA TRANSFER RATE CORRESPONDING TO CHANGED DISK ROTATIONAL SPEED
S502
INSTRUCT DECREASE OF ACCESS SPEED
S503
INSTRUCT DECREASE OF LUMINANCE OF BACKLIGHT OF DISPLAY SECTION (SWITCHING OFF)
S504
DISPLAY PERFORMANCE STATUS
S505